

# Mineral Industry Surveys

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## LEAD IN NOVEMBER 2018

Domestic secondary refined lead production in November was 94,600 metric tons (t), essentially unchanged from the previous month and 3% more than that in November 2017 (tables 1, 2).

The United States is a significant exporter of lead concentrates. Through November, U.S. exports of lead in ores and concentrates were 234,000 t, 12% less than that for the same period in 2017. Leading destinations were China (30%), Canada (19%), and the Republic of Korea (18%) (table 8).

### Prices and Stocks

The London Metal Exchange, Ltd. (LME) cash price was \$0.88 per pound, slightly less than that in the previous month, and 21% less than that in November 2017 (table 3).

The Platts Metals Week average North American Market price for lead in November 2018 was \$0.97 per pound, slightly less than that in the previous month, and 20% less than that in November 2017. The North American premium to the LME cash price in November 2018 averaged about 9.31 cents per pound, slightly less than that in October 2018 and November 2017 (fig. 1, table 3).

The Platts average U.S. used lead-acid batteries (Midwest) price in November 2018 was \$0.31 per pound, 5% less than that in October and 28% less than that in November 2017 (table 3). Most of the secondary lead is recovered from used lead-acid batteries.

Global LME lead stocks in November 2018 were 105,125 t, which were 7% less than those at the end of October 2018 and 28% less than those at the end of November 2017 (table 11).

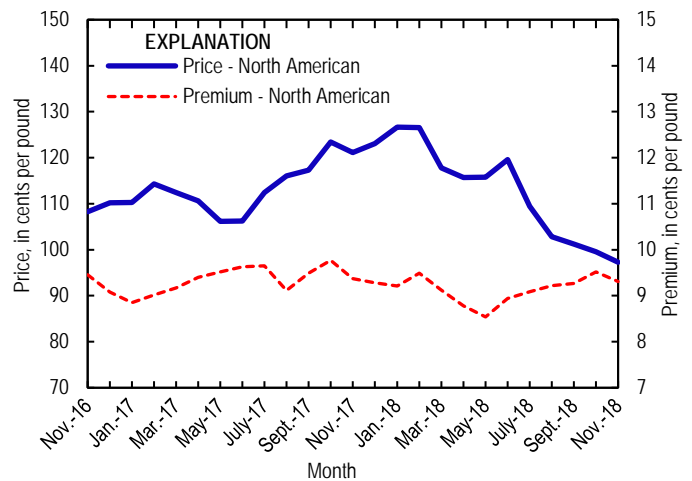


Figure 1. Average monthly North American price and premium for refined lead metal from November 2016 through November 2018. Source: Platts Metals Week.

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TABLE 1  
SALIENT LEAD STATISTICS IN THE UNITED STATES<sup>1</sup>

(Metric tons, lead content, unless otherwise specified)

	2017		2018		
	January– December <sup>2</sup>	January– November <sup>r</sup>	October	November	January– November <sup>2</sup>
<b>Production:</b>					
Mine (recoverable)	302,000	280,000 <sup>r</sup>	W	W	W
Secondary refinery, reported by smelters/refineries	1,130,000	1,030,000 <sup>r</sup>	94,600	94,600	1,040,000
Consumption of refined lead, apparent <sup>e,3</sup>	1,760,000	1,630,000 <sup>r</sup>	121,000	127,000	1,510,000
<b>Imports for consumption:</b>					
Ore and concentrate	--	--	--	--	--
Bullion	--	--	--	--	739
Unwrought	658,000	620,000	38,500	46,100	525,000
<b>Exports:</b>					
Ore and concentrate	269,000	266,000 <sup>r</sup>	37,000	12,900	234,000
Bullion (gross weight)	1,550	1,550	408	146	2,010
Unwrought (gross weight)	23,900	22,200	12,300	14,000	58,700
<b>Platts Metals Week North American Market</b>					
price (cents per pound)	114.45	113.67	99.53	97.29	112.04

<sup>e</sup>Estimated. <sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits, except prices; may not add to totals shown.

<sup>2</sup>May include revisions to previously published data.

<sup>3</sup>Smelter production plus imports for consumption minus domestic exports.

TABLE 2  
MINE AND SECONDARY REFINERY PRODUCTION OF LEAD  
IN THE UNITED STATES<sup>1</sup>

(Metric tons)

Period	Mine		Secondary refinery <sup>c</sup>
	Lead in concentrate	Recoverable	
2017:			
November	28,100	27,300	91,400
December	22,600	21,900	94,300
January–December	310,000	302,000	1,130,000
2018:			
January	22,700	22,100	95,100
February	17,900	17,900	91,500
March	21,200	20,700	97,500
April	23,000	22,200	97,300
May	23,700	23,000	91,400
June	24,400	23,400	92,400
July	W	W	97,000
August	W	W	96,600
September	W	W	92,900
October	W	W	94,600
November	W	W	94,600
January–November	W	W	1,040,000

<sup>c</sup>Estimated. W Withheld to avoid disclosing company proprietary data.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 3  
MONTHLY AVERAGE LEAD PRICES

	North	London Metal Exchange		Used lead-acid
	American Market <sup>1</sup>	cash		batteries <sup>2</sup>
	¢/lb	¢/lb	\$/t	¢/lb
2017:				
November	121.13	111.76	2,463.80	43.28
December	123.05	113.77	2,508.20	43.00
January–December	114.45	105.10	2,317.00	40.92
2018:				
January	126.65	117.44	2,589.08	43.23
February	126.53	117.04	2,580.29	43.88
March	117.82	108.70	2,396.45	43.50
April	115.69	106.91	2,356.95	43.25
May	115.75	107.20	2,363.44	44.25
June	119.63	110.68	2,440.14	43.19
July	109.44	100.35	2,212.39	41.60
August	102.85	93.64	2,064.34	37.03
September	101.25	91.98	2,027.78	34.38
October	99.53	90.02	1,984.58	33.00
November	97.29	87.98	1,939.65	31.25
January–November	112.04	102.90	2,268.64	39.87

<sup>1</sup>Platts Metals Week North American Market price. Reflects the LME lead cash price plus the Platts premium for 99.97% lead.

<sup>2</sup>Platts Metals Week assessment for used lead-acid automotive batteries (50% lead) picked up in U.S. Midwest, suitable for delivery to secondary smelters within 30 days.

Source: Platts Metals Week.

TABLE 4  
CONSUMPTION OF PURCHASED LEAD-BASE SCRAP IN NOVEMBER 2018<sup>1</sup>

(Metric tons, gross weight)

Item	Stocks October 31, 2018	Net receipts	Consumption	Stocks November 30, 2018
Battery-lead	25,700	73,900	73,900	26,000
Other <sup>2</sup>	13,900	15,100	15,100	13,900
Total	39,600	89,000	89,000	39,600
Percent change from preceding month <sup>3</sup>	XX	1.6	--	--

XX Not applicable. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes soft lead, solder, drosses and residues, common babbitt, antimonial lead, cable covering, type metals, and other lead-base scrap.

<sup>3</sup>Based on unrounded data; preceding monthly data may have been revised.

TABLE 5  
LEAD, TIN, AND ANTIMONY RECOVERED FROM  
LEAD-BASE SCRAP IN NOVEMBER 2018<sup>1</sup>

(Metric tons)

Product recovered	Secondary metal content		
	Lead	Tin	Antimony
Soft and calcium lead	79,500	--	--
Remelt lead	W	--	--
Antimonial lead	14,500	W	W
Other <sup>2</sup>	W	W	--
Total lead-base	94,600	191	W

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes cable lead, lead-base babbitt, solder, type metals, and other products.

TABLE 6  
U.S. APPARENT CONSUMPTION OF LEAD<sup>1</sup>

(Metric tons)

Period	Production	Imports <sup>2,3</sup>	Exports <sup>2,3</sup>	Apparent consumption <sup>4</sup>
2017: <sup>P</sup>				
November	91,400	48,600	1,350	139,000
December	94,300	37,700	1,700	130,000
January–December	1,130,000	658,000	23,900	1,760,000
2018:				
January	95,100	36,200	758	131,000
February	91,500	65,000	1,510	155,000
March	97,500	66,900	1,740	163,000
April	97,300	44,900	2,790	139,000
May	91,400	40,500	2,780	129,000
June	92,400	55,400	4,200	144,000
July	97,000	33,600	3,460	127,000
August	96,600	39,300	7,700	128,000
September	92,900	58,700	7,440	144,000
October	94,600	38,500	12,300	121,000
November	94,600	46,100	14,000	127,000
January–November	1,040,000	525,000	58,700	1,510,000

<sup>P</sup>Preliminary.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Import and export data are for Harmonized Tariff Schedule of the United States (HTS) codes 7801.10.0000, 7801.91.0000, 7801.99.9030, 7801.99.9050.

<sup>3</sup>Source: U.S. Census Bureau.

<sup>4</sup>Smelter production plus imports for consumption minus domestic exports.

TABLE 7  
U.S. EXPORTS OF LEAD, BY CLASS<sup>1</sup>

(Metric tons, gross weight, unless otherwise specified)

	2017		2018		
	January– December <sup>2</sup>	January– November <sup>r</sup>	October	November	January– November
Ores and concentrate (lead content):	269,000	266,000 <sup>r</sup>	37,000	12,900	234,000
Bullion	1,550	1,550	408	146	2,010
Unwrought:					
Refined lead	2,020	1,910	10,400	13,200	41,500
Refined lead containing antimony as the principal alloying element	2,330	2,250	62	10	615
Lead alloys	19,300	17,800	1,400	669	13,700
Other	283	283	392	157	2,850
Total	23,900	22,200	12,300	14,000	58,700
Wrought:					
Bars, rods, profiles, and wire	1,040	949	55	63	791
Pipes and tubes, including fittings	251	199	34	6	113
Plates, sheets, strip, foil	4,700	4,250	191	171	2,910
Other	1,560	1,400 <sup>r</sup>	172	134	1,630
Total	7,550	6,800 <sup>r</sup>	452	374	5,440
Powders and flakes	186	172 <sup>r</sup>	10	12	313
Tetraethyl lead and tetramethyl lead	260	225	64	46	470
Waste and scrap:					
Spent lead-acid storage batteries for starting engines	19,700	17,800	2,190	2,170	25,000
Lead waste and scrap obtained from lead-acid storage batteries	20,000	18,200	--	--	9,200
Other lead waste and scrap	37,600	33,600 <sup>r</sup>	3,480	3,920	36,800

<sup>r</sup>Revised. -- Zero.

<sup>1</sup>Data are rounded to more than three significant digits; may not add to totals shown.

<sup>2</sup>May include revisions to previously published data.

Source: U.S. Census Bureau.



TABLE 8  
U.S. EXPORTS OF LEAD ORES AND CONCENTRATES, BY COUNTRY<sup>1</sup>

(Metric tons, lead content)

	2017		2018		
	January– December <sup>2</sup>	January– November	October	November	January– November
Australia	7,370	7,370	7,310	--	7,310
Canada	36,600	35,200 <sup>†</sup>	1,410	4,300	45,000
China	134,000	133,000	7,970	--	69,600
Germany	14,800	14,800	--	7,910	15,100
Italy	7,470	7,470	--	--	7,170
Japan	24,400	24,300	8,240	--	18,800
Korea, Republic of	43,300	43,300	12,100	327	42,100
Mexico	868	838	34	383	19,100
Netherlands	--	--	--	--	7,100
Peru	29	--	--	--	--
Saudi Arabia	15	15	--	--	27
Thailand	--	--	--	--	2,520
Total	269,000	266,000 <sup>†</sup>	37,000	12,900	234,000

<sup>†</sup>Revised. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>May include revisions to previously published data.

TABLE 9  
U.S. IMPORTS FOR CONSUMPTION OF LEAD, BY CLASS<sup>1</sup>

(Metric tons, gross weight, unless otherwise specified)

	2017		2018		
	January– December <sup>2</sup>	January– November	October	November	January– November
Ores and concentrate (lead content):	--	--	--	--	--
Bullion (lead content)	--	--	--	--	739
Unwrought:					
Refined lead	538,000	509,000	26,600	35,600	421,000
Refined lead containing antimony as the principal alloying element (lead content)	40,800	38,100	4,700	3,510	41,900
Lead alloys (lead content)	22,300	20,600	1,890	1,810	16,400
Other (lead content)	56,300	52,000 <sup>r</sup>	5,330	5,150	45,800
Total	658,000	620,000	38,500	46,100	525,000
Wrought:					
Bars, rods, profiles, and wire	2,020	1,980	45	43	809
Pipes and tubes, including fittings	37	37	19	1	25
Plates, sheets, strip, foil	1,590	1,510	176	136	1,590
Other	3,840	3,480	236	655	3,450
Total	7,480	7,000	476	835	5,870
Powders and flakes	343	315	19	35	203
Tetraethyl lead and tetramethyl lead	972	892 <sup>r</sup>	9	12	752
Waste and scrap:					
Spent lead-acid storage batteries for starting engines (units)	1,460	1,360 <sup>r</sup>	234	12	989
Lead waste and scrap obtained from lead-acid storage batteries (lead content)	4,180	4,100	138	207	1,570
Other lead waste and scrap (lead content)	2,430	2,180	240	193	2,300

<sup>r</sup>Revised. -- Zero.

<sup>1</sup>Data are rounded to more than three significant digits; may not add to totals shown.

<sup>2</sup>May include revisions to previously published data.

Source: U.S. Census Bureau.

TABLE 10  
U.S. IMPORTS FOR CONSUMPTION OF UNWROUGHT LEAD BY  
COUNTRY OR LOCALITY<sup>1</sup>

(Metric tons, lead content)

Material and country or locality of origin	2017		2018		
	January– December <sup>2</sup>	January– November	October	November	January– November
<b>Refined lead:</b>					
Argentina	2,880	2,130	--	754	5,640
Australia	7,570	7,570	1,770	1,020	2,780
Azerbaijan	955	883	--	--	--
Bolivia	889	889	--	--	--
Brazil	20,800	19,300	1,050	1,410	14,100
Burma	1,150	1,150	--	--	100
Canada	160,000	149,000	9,250	10,300	133,000
Chile	--	--	--	--	100
China	12	12	--	--	--
Colombia	1,500	1,500	--	--	491
Dominican Republic	693	693	25	--	250
Ecuador	14,400	13,100	1,150	800	9,360
Ghana	97	97	--	--	--
Honduras	--	--	--	--	199
India	55,400	53,400	199	755	23,100
Israel	1,990	1,990	--	--	1,820
Kazakhstan	5,550	5,040	--	--	5,130
Korea, Republic of	127,000	127,000	4,930	12,300	105,000
Mexico	103,000	95,600	7,770	7,520	101,000
Nigeria	1,480	1,480	--	--	--
Panama	--	--	--	--	125
Peru	3,900	3,400	--	400	2,650
Poland	165	165 <sup>r</sup>	--	--	--
Russia	14,700	11,600	--	--	6,460
Saudi Arabia	999	999	--	--	--
Serbia	2,020	2,020	--	--	--
South Africa	654	654	--	--	174
Sri Lanka	2,500	2,250	--	--	625
Thailand	3,590	3,400 <sup>r</sup>	--	347	6,900
United Arab Emirates	148	148	--	--	--
United Kingdom	532	532	99	--	388
Venezuela	3,030	3,030	370	--	2,160
<b>Total</b>	<b>538,000</b>	<b>509,000</b>	<b>26,600</b>	<b>35,600</b>	<b>421,000</b>
<b>Other unwrought lead:<sup>3</sup></b>					
Argentina	882	882	--	--	1,920
Bolivia	456	456	--	--	--
Brazil	1,550	1,550	--	--	--
Canada	91,200	83,600 <sup>r</sup>	9,960	8,570	83,800
Chile	2,220	1,890	--	--	1,780
Columbia	--	--	605	--	1,040
Costa Rica	171	171	705	276	4,250
Ecuador	2,310	2,310	--	--	125
Egypt	402	402	--	--	--
Ghana	98	98	--	--	--
Guatemala	96	96	--	--	--
Honduras	3,840	3,160	--	--	2,490
India	1,590	1,590 <sup>r</sup>	--	20	38

See footnotes at end of table.

TABLE 10—Continued  
U.S. IMPORTS FOR CONSUMPTION OF UNWROUGHT LEAD BY  
COUNTRY OR LOCALITY<sup>1</sup>

(Metric tons, lead content)

Material and country or locality of origin	2017		2018		
	January– December <sup>2</sup>	January– November	October	November	January– November
Mexico	6,430	6,430	657	1,510	7,220
Panama	997	997	--	--	199
Paraguay	411	411	--	--	--
Peru	223	223	--	--	50
Russia	2,960	2,960	--	38	209
Senegal	1,470	1,470	--	--	--
South Africa	--	--	--	--	95
Turkey	1	1	--	--	--
United Kingdom	794	717	--	--	--
Venezuela	626	626	--	55	807
Vietnam	683	683	--	--	--
Total	119,000	111,000	11,900	10,500	104,000
Grand total	658,000	620,000	38,500	46,100	525,000

<sup>r</sup>Revised. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>May include revisions to previously published data.

<sup>3</sup>Includes the lead content (Quantity 2) of Harmonized Tariff Schedule of the United States (HTS) codes 7801.91.0000, 7801.99.9030, 7801.99.9050. Excludes bullion.

Source: U.S. Census Bureau.

TABLE 11  
LONDON METAL EXCHANGE (LME) STOCKS OF LEAD, END OF PERIOD

(Metric tons)

Period	United States	Asia	Europe	Total
2017:				
November	--	48,400	96,600	145,000
December	--	49,600	92,700	142,000
2018:				
January	--	47,300	86,000	133,000
February	--	44,400	80,900	125,000
March	--	42,500	86,600	129,000
April	--	42,100	88,700	131,000
May	--	41,500	92,000	133,000
June	--	40,100	91,500	132,000
July	--	35,000	92,000	127,000
August	--	33,600	89,300	123,000
September	--	27,200	88,500	116,000
October	--	23,600	90,000	114,000
November	--	21,100	84,100	105,000

-- Zero.

Source: London Metal Exchange, Ltd.